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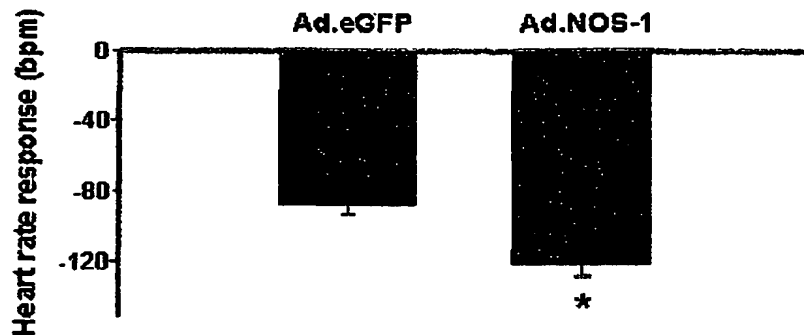
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(54) Title: **NITRIC OXIDE SYNTHASE GENE TRANSFER TO THE ATRIUM FOR VAGAL TONE INCREASE**



(57) Abstract: High vagal tone is a positive prognostic indicator against sudden cardiac death, whereas impaired activity is a strong predictor of mortality. NOS gene transfer to cardiac tissue has been found to increase expression of the enzyme in cholinergic ganglia, to increase the release of acetylcholine, and to enhance the heart rate response to vagal nerve stimulation. The invention provides methods and products for increasing cardiac vagal responsiveness and vagal tone and for decreasing sympathetic activity, e.g. for increasing bradycardia, for reducing cardiac autonomic impairment, for reducing the risk of sudden cardiac death, for reducing arrhythmia, for reducing the risk of myocardial infarction, and/or for reducing hypertension. The invention is particularly useful for patient groups where exercise training may be poorly tolerated. A typical method involves the step of delivering to a patient's cardiac autonomic structures nucleic acid which, when expressed, increases nitric oxide synthase levels.